What is Claimed Is:

1. A method for creating a graphical program which performs register accesses in a hardware device, wherein the method operates in a computer including a display screen and a user input device, the method comprising:

displaying on the screen a register access node in the graphical program in response to user input; and

configuring the register access node to access one or more registers of a hardware device;

wherein, during execution of the graphical program, the register access node is operable to access the one or more registers of the hardware device.

2. The method of claim 1, wherein said configuring the register access node includes:

displaying a list of registers; and

receiving user input to select one or more of the registers from the list of registers.

3. The method of claim 1, further comprising:

storing a description of the hardware device in the computer;

wherein the register access node uses the description of the hardware device to access registers of the hardware device during execution of the graphical program.

4. The method of claim 3,

wherein said configuring the register access node to access one or more registers of the hardware device comprises configuring the register access node to access selected registers described in the description of the hardware device.

5. The method of claim 3, wherein the description includes mnemonic names of registers;

wherein said configuring the register access node includes:

displaying a list of the mnemonic names of registers on the display; and

receiving user input selecting one or more of the mnemonic names of registers for access.

5   6.   The method of claim 5, wherein the description further includes mnemonic names of fields in the registers;

wherein said configuring the register access node includes:

displaying a list of the mnemonic names of fields in the registers on the display; and

10   receiving user input selecting one or more of the mnemonic names of fields in the registers for access.

     7.   The method of claim 1, wherein said configuring the register access node comprises:

15   displaying an icon on the graphical program which references register access node configuration information; and

connecting the icon to the register access node.

     8.   The method of claim 7, wherein the icon is a hardware open node.

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     9.   The method of claim 1, wherein said register access node comprises one or more input terminals, the method further comprising:

configuring the one or more input terminals to write a register of the hardware device.

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     10.   The method of claim 1, wherein said register access node comprises one or more output terminals, the method further comprising:

configuring the one or more output terminals to read a register of the hardware device.

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11.   The method of claim 1, further comprising:

displaying on the screen a first node in response to user input, wherein the first node references the hardware device; and

connecting the first node to the register access node, wherein said connecting

5   provides the register access node with information regarding the hardware device.

12.   The method of claim 11, wherein the first node is a hardware refnum node which references a description of the hardware device.

10   13.   The method of claim 11, wherein said connecting the first node to the register access node includes displaying on the screen a wire connecting the first node to the register access node.

14.   The method of claim 1, further comprising:

15   constructing execution instructions in response to the graphical program, wherein the execution instructions are executable to access registers of the hardware device.

15.   The method of claim 14, further comprising:

executing said execution instructions, wherein the register access node accesses

20   registers of the hardware device during said executing.

16.   The method of claim 1, wherein the graphical program is operable to access registers of the hardware device for performing instrumentation functions on an instrument.

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17.   A method for creating a graphical program which performs register accesses in a hardware device, wherein the method operates in a computer including a display and a user input device, the method comprising:

30   storing a description of a hardware device;

displaying on the screen a first node in response to user input, wherein the first node references the description of the hardware device;

displaying on the screen a register access node in response to user input, wherein the register access node is operable to access the hardware device;

5   connecting the first node to the register access node in response to user input, wherein the first node is operable to provide the description of the hardware device to the register access node;

wherein the register access node receives the description, wherein the register access node is operable to access registers of the hardware device during execution of the

10   graphical program.

18.   The method of claim 17, further comprising:

configuring the register access node to access selected registers described in the description of the hardware device.

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19.   The method of claim 18, wherein said configuring the register access node includes:

displaying a list of registers described in the description of the hardware device;

receiving user input to select one or more of the registers from the list of registers.

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20.   The method of claim 19, wherein the description includes mnemonic names of registers;

wherein said configuring the register access node includes:

displaying a list of the mnemonic names of registers on the display; and

25   receiving user input selecting one or more of the mnemonic names of registers for access.

21.   The method of claim 20, further comprising:

displaying selected mnemonic names of registers on the display after said

30   receiving user input selecting one or more of the mnemonic names of registers for access.

22. The method of claim 20, wherein the description further includes mnemonic names of fields in the registers;

wherein said configuring the register access node includes:

displaying a list of the mnemonic names of fields in the registers on the display; and

receiving user input selecting one or more of the mnemonic names of fields in the registers for access.

23. The method of claim 17, further comprising:

displaying on the screen a list of descriptions of available hardware devices;

selecting a description from the list of descriptions.

24. The method of claim 17, wherein said register access node comprises one or more input terminals, wherein, for each input terminal, the method further comprises:

configuring each input terminal to write a register of the hardware device.

25. The method of claim 17, wherein said register access node comprises one or more output terminals, wherein, for each output terminal, the method further comprises:

configuring said each output terminal to read a register of the hardware device.

26. The method of claim 17, wherein receiving user input further comprises:

selecting a first register from said list of registers;

associating a first terminal of the register access node with said first register;

selecting the first terminal as a read or a write terminal;

connecting the first terminal to a node in the graphical program; and

repeating the above steps for one or more registers of the hardware device.

27.   The method of claim 26, wherein the register access node is a growable node which may comprise a variable number of user selected terminals.

28.   The method of claim 17, further comprising:

displaying a name of the hardware description on the register access node in response to connecting the first node to the register access node.

29.   The method of claim 17, wherein the first node is a hardware open node.

30.   The method of claim 29, further comprising:

displaying on the screen a hardware refnum node in response to user input, wherein the hardware refnum node references the description of the hardware device; and

connecting the hardware refnum node to the first node, wherein said connecting provides the first node with a reference to the description of the hardware device.

31.   The method of claim 17, wherein the first node is a hardware refnum node which references the description of the hardware device.

32.   The method of claim 17, wherein said connecting the first node to the register access node includes displaying on the screen a wire connecting the first node to the register access node.

33.   The method of claim 17, further comprising:

constructing execution instructions in response to the graphical program, wherein the execution instructions are executable to access registers of the hardware device.

34.   The method of claim 33, further comprising:

executing said execution instructions, wherein the register access node accesses registers of the hardware device during said executing.

35.   The method of claim 17, wherein the graphical program is operable to access registers of the hardware device for performing instrumentation functions on an instrument.

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36.   A method for creating a graphical program which performs register accesses in a hardware device, wherein the method operates in a computer including a display and a user input device, the method comprising:

storing a description of a hardware device;

10   displaying on the screen a register access node in the graphical program in response to user input, wherein the register access node is operable to access the hardware device;

connecting an input of the register access node to receive a description of a hardware device in response to user input; and

15   configuring the register access node to access selected registers described in the description of the hardware device in response to user input;

wherein the register access node is operable to access the selected registers of the hardware device during execution of the graphical program.

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37.   A memory medium for performing register accesses in a hardware device, the memory medium comprising program instructions executable to:

display on the screen a register access node in the graphical program in response to user input; and

25   configure the register access node to access one or more registers of a hardware device;

wherein, during execution of the graphical program, the register access node is operable to access the one or more registers of the hardware device.

38.   The memory medium of claim 37, wherein in performing said configuring the register access node, the program instructions are executable to:

display a list of registers; and

receive user input to select one or more of the registers from the list of registers.

39.   The memory medium of claim 37, further comprising program instructions executable to:

store a description of the hardware device in the computer;

wherein the register access node uses the description of the hardware device to access registers of the hardware device during execution of the graphical program.

40.   The memory medium of claim 39,

wherein said configuring the register access node to access one or more registers of the hardware device comprises configuring the register access node to access selected registers described in the description of the hardware device.

41.   The memory medium of claim 37, wherein said configuring the register access node comprises:

displaying an icon on the graphical program which references register access node configuration information; and

connecting the icon to the register access node in response to user input.

42.   The memory medium of claim 37, further comprising program instructions executable to:

construct execution instructions in response to the graphical program, wherein the execution instructions are executable to access registers of the hardware device.

43.   A system for performing register accesses in a hardware device, the system comprising:

a computer including a processor coupled to a memory;

a hardware device coupled to the computer;

wherein the processor is operable to execute program instructions stored in the memory to:

5   display on the screen a register access node in a graphical program in response to user input; and

configure the register access node to access one or more registers of the hardware device;

wherein, during execution of the graphical program, the register access node is

10 operable to access the one or more registers of the hardware device.

44.   The system of claim 43, wherein in performing said configuring the register access node, the processor is operable to execute program instructions to:

display a list of registers; and

15   receive user input to select one or more of the registers from the list of registers.

45.   The system of claim 43, wherein the processor is further operable to execute program instructions stored in the memory to:

store a description of the hardware device;

20   wherein the register access node uses the description of the hardware device to access registers of the hardware device during execution of the graphical program.

46.   The system of claim 45,

wherein said configuring the register access node to access one or more registers

25 of the hardware device comprises configuring the register access node to access selected registers described in the description of the hardware device.

47.   The system of claim 43, wherein the processor is further operable to execute program instructions stored in the memory to:

construct execution instructions in response to the graphical program, wherein the execution instructions are executable to access registers of the hardware device.